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Subject: Defense Technology stories, by Brodie

State and feds launch epidemiological study near Ormsby Road

By BRODIE FARQUHAR

Star-Tribune staff writer

CST - Local health department workers will team up with state and federal officials to determine what is causing health problems in residents of the Ormsby Road area north of Casper.

Furthermore, the owner of a local bar says she may have to close down to protect the health of herself and her employees.

Bob Harrington, director of the City of Casper-Natrona County Health Department, said a conference call last Friday tied his agency in with state health officials, the state Department of Environmental Quality and the federal Environmental Protection Agency.

"We don't have the expertise, but we'll be doing much of the labor," Harrington said.

The agencies are developing a standard questionnaire that will be distributed among residents of the area -- some of whom suspect their illnesses and symptoms are attributable to the Defense Technology plant on Neosho Road, which manufactures and tests tear gas grenades for sale to police, security and military customers around the world.

Harrington said the questionnaire would not assume anything, but instead be a standard tool of epidemiological research, and that it would develop a body of data that could lead to further inquiries and sampling.

"I understand the EPA and DEQ are going to be taking some water samples from area wells, as well as swipe samples from nearby homes," Harrington said.

Joyce Ackerman of the EPA said she and a technician will be in the area Friday, taking some quick samples to see if anything registers in the lab.

Neighbors of the Defense Technology plant have been complaining of burning eyes, noses and throats, headaches, nausea and vomiting -- all classic and well-known symptoms of exposure to tear gas. Other symptoms, however, such as memory loss, chronic weakness and depressed immune systems, are not generally associated with exposure to tear gas chemistry, agree toxicologists.

Defense Technology employs 82 people in the Casper area -- 14 at 9125 Neosho Road, and the rest at its South Loop Avenue facilities just north of Casper.

Harrington said the questionnaire will be out shortly and his staff will seek out as many residents of the areas as possible to gather information for later statistical analysis. He cautioned that

epidemiological studies often do not produce definitive results. "It can be very vague and difficult to draw conclusions," he said.

Harrington said he's been in touch with Mary Stedman, owner of the Northern Dreams bar on Ormsby Road, who complains that she, her family, bar employees and some renters are suffering from inexplicable health problems -- vomiting, sore throats, headaches, rashes, blood in urine, ulcers and flu-like symptoms. Stedman said she moved her family away from the area on Friday.

"If officials can't figure out what's going on, I'm going to shut down my bar," Stedman said Tuesday in an interview. She said she didn't want to further risk her family's health, nor the health of employees.

"That's my livelihood, so are all these rentals," Stedman said of the potential closure of her bar and her departure from the neighborhood. "I just don't want anybody else to be sick, that's all I'm saying."

A longtime resident of the area, Stedman said her property touches the Defense Technology plant property to the southwest. Stedman said her dog, a bird and her fish are sick, as are her daughters and grandchildren. She said she spent Wednesday evening knocking on the doors of 10 neighbors -- all of whom have said they're sick, too, and have wondered why.

Dave Dubay, local spokesman for Defense Technology, was out of town this week and could not be contacted for comment about the epidemiological study or the potential closing of the Northern Dreams bar.

Sheriff's Lt. Stew Anderson, emergency manager for the county, said Defense Technology has provided him with a map, showing the location of stored chemicals in its plants, as well as data sheets on additional chemicals that are reportable under federal law. Previously, Anderson noted that Defense Technology had not updated its chemical reporting data since 1998, and had not provided the county emergency management office with a location map of hazardous chemicals.

Archived NewsFront Story

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Ill neighbors blame tear gas manufacturer

Company says it fully complies with EPA standards

By BRODIE FARQUHAR

Star-Tribune staff writer

Neighbors downwind of a Defense Technology facility north of Casper are complaining of burning eyes, noses and throats, headaches, nausea and vomiting -- all symptoms of exposure to tear gas.

The neighbors, who live hundreds of yards away from the tear gas manufacturing and testing facility, say they believe their symptoms are connected to tear gas chemicals released in open-air tests, from factory vents, and over the past three years, by two fires at the Neosho Road plant north of Casper.

However, experts say tear gas chemicals typically disperse quickly in

the open air, especially in a breeze.

The cluster of symptoms reported by the residents has prompted the state epidemiologist to recommend that those living downwind of the plant see their physicians for blood tests, and that the physicians consult with the state Department of Health.

The state's Department of Environmental Quality and the federal Environmental Protection Agency are currently conducting their own investigations into the complaints.

Julie Anderson, spokeswoman for Armor Holdings Inc., of Jacksonville, Fla., which owns Defense Technology, said the company is in full compliance with EPA standards.

Steve Croskrey, chief executive officer of Armor's product division, said from Jacksonville that the company wants to be good corporate neighbors.

"We welcome community interest," he said, adding that tours for interested parties can always be arranged.

Downwinders complain

"My eyes sting, I always have a sore throat and I and my son are tired all the time," said "Red" Lewis, who lives perhaps half a mile from the Defense Technology plant.

The Lewis family has horses on two widely separated pastures. The horses closest to the house and the tear gas plant seem to be suffering from flu-like symptoms, he said. Their eyelashes appear gummy and matted, while their coats appear dull. The horses pastured farther away from Defense Technology do fine, he added.

"Sometimes there are popping noises from over there," he said, referring to the Defense Technology plant, "and my dogs disappear."

Armor's Croskrey said the Neosho Road plant conducts open air tests of smoke grenades about twice a week. Outdoor tear gas tests are less frequent, he said.

June Lewis said her family initially thought they'd run into a nasty, winter-long flu, but after talking with other neighbors, began to wonder if symptoms could be attributed to the tear gas plant. She said there always seems to be a "funny smell" in the air, downwind from the Def-Tech plant.

She and son Ken often travel to Chadron, Neb., for contract painting jobs. "We feel better after a few days over there," she said, and worse when they come back home. Even so, for about the past year, everyone seems to be chronically tired -- a condition they've never had before. They've also directly encountered fumes from Defense Technology's outdoor tests of tear gas.

"We were riding our horses down the road one day (by the Defense Technology plant), and suddenly our eyes and noses started stinging something awful," said June Lewis.

Her neighbors, Tom and Kathy Mayo, who lived across and down the road from Defense Technology, said they've had to move out of their home and back into Casper to get away from whatever has been causing their symptoms. Initially thinking they'd run into a particularly strong strain of flu, the Mayos said they began to correlate symptoms with outdoor testing by Defense Technology, venting of the facility or wind patterns that swept from the north.

Tom Mayo said that in the past he's tended to shrug off his stinging eyes and nose tear-gas symptoms he's experienced when he could see and hear Defense Technology running outdoor tests across the road.

"It goes away pretty quick," he said.

What hasn't gone away, however, is a pervasive "something" in his trailer, RV, furnishings, carpeting, curtains, clothes and automobiles, that keep Tom and Kathy constantly sick whenever they're at their Neosho Road property. Despite thorough cleaning and airing out, Tom Mayo said he can't stay at his Neosho Road property longer than half an hour

without nausea and vomiting.

He's made numerous experimental efforts, going back to his trailer for brief visits, only to be driven out when nausea strikes again. He fears he's developed a hyper-sensitivity to the chemicals that waft across the road from Defense Technology, or their residues.

March fire

The Mayos said their symptoms got worse after a fire at the facility in early March. Natrona County Fire Protection District spokesman Howard Oden said at that time, that the fire started when machinery used to compress tear gas for grenades malfunctioned.

It was the second fire in four years. Earlier, firefighters were exposed to tear gas while extinguishing a fire at the facility in May 1998 and had to be evaluated at the emergency room. Back in 1993, a Def-Tech employee suffered second- and third-degree burns to his face, arms and hands when the explosive chemicals he was mixing caused a flash-type explosion.

In addition to burning eyes and throat symptoms over the past year, Kathy Mayo said her immune system has been knocked out of whack, with persistent infections that won't go away. Concerned that there might be a link between exposure to Defense Technology chemicals and her illness, Kathy had her blood tested, which came back with a general diagnosis of "chemical exposure."

"My doctor wants me to take another test in 30 days," said Kathy Mayo. Mayo's physician, Dr. Mark Mosemann, said he ran a CBC (complete blood count) test on her, which came back with a general, unspecified indication of chemical exposure. Mosemann said he's not a toxicology expert. He still can't say what is causing her symptoms and cannot rule out whether she's allergic to pollen or chemicals from the plant -- the CBC test wasn't designed to answer that, he said.

With a list of chemicals used at the Defense Technology plant, Mosemann or other physicians can order more specific tests to screen for the presence of those chemicals in Mayo's blood.

The Mayos, who own a tire store, enlisted tire store employee Ken Campbell to help them move some of their things from their Neosho property into Casper. Campbell said he noticed that where a Mayo curtain touched his neck, the skin became inflamed. He said he often has a sore throat after he goes over to the Mayo place to feed their chickens and a couple of calves. Campbell said he thinks he brought home something strange that affected his wife.

"My wife got sick and threw up," after washing the clothes he was wearing when he helped the Mayos move, Campbell said.

Don Stevens, another neighbor of the Mayos, said in a telephone interview that he's recently moved to Nevada to get away from the chemicals wafting through his property from the nearby plant.

Stevens said he often felt his eyes, nose and mouth water and sting, shortly after he heard shooting or popping noises from the Def-Tech property. Particularly troublesome was a strong metallic taste in his mouth when the wind blew his way from Def-Tech, Stevens said.

Defense Technology's public relations office stated that "We have recently received and logged complaints from one household in the Neosho Road area and we took those complaints from that one source very seriously. We sent our Director of Research and Development (David Dubay) to the household and detected no issues related to the manufacture or testing of our products."

That isn't how Tom Mayo recalls it. "All he (Dubay) did was stand there and talk," Mayo said. He said Dubay suggested that a dead mouse was causing Mayo to vomit.

Dubay did not respond to repeated phone calls from the Star-Tribune.

Cutline: SARAH BETH BARNETT/Star-Tribune
June and 'Red' Lewis stand in their yard with their horses Shorty and Double
Aught within about a mile of the Defense Technology plant north of Casper.

Breakout: Defense Technology profile
Defense Technology Corp. of America is a branch of Armor Holdings, Inc., which
had \$221 million in sales in 2000. The group is a leading provider of security
products and services to government agencies, law enforcement and multinational
corporations, with offices in 18 countries.
Locally, Defense Technology manufactures a line of "less-than-lethal" products,
including tear gas and pepper spray, and has operated in Casper since 1981.
Defense Technology was purchased by Armor Holdings in 1996. Since then, Armor
has acquired 16 other companies.
Defense Technology employs 82 people in the Casper area -- 14 at 9125 Neosho
Road, and the rest at its South Loop Avenue facilities just north of Casper.

Archived NewsFront Story

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County office awaits list of chemical hazards

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The Natrona County Emergency Management Office has yet to receive either an updated summary of what chemicals are used by Defense Technology or a map showing what chemicals are stored where.
Yet company officials insist that such information has been provided to the Natrona County Sheriff's Office. Steve Croskrey, chief executive officer of Armor Holdings' product division, said in an interview from Jacksonville, Fla., that local management would be talking to the sheriff to straighten out what he claims is a misunderstanding.
"You've seen my Defense Technology file," said local emergency manager for the sheriff, Lt. Stew Anderson, on Friday. "Updated chemical lists and a map showing where chemicals are stored are not in that file."
The list and map would be useful to firefighters, who must know what hazards are present when dealing with a fire or other emergency, Anderson said. Companies are required by federal law to provide local emergency management agencies with such information.
In fact, Anderson said firefighters in Natrona County needed just this type of information in recent years when responding to two fires at the

Defense Technology plant on Neosho Road.

"At the last fire, they met us at the gate with a list of chemicals -- but that's not the same thing as providing us with a federally required list," Anderson said. Of all the Casper-area businesses that provide Anderson's office with the federally required lists and maps, 90 percent send them in by registered mail to ensure a formal record exists of the disclosure, he said.

Anderson said the now-outdated list of chemicals was provided by Defense Technology in the wake of a 1998 fire at its Neosho Road plant, and has not been updated by the company either in 1999 or 2000 -- at least not with his office, the county's one-stop shop for emergency management information and planning.

The 1998 list of Defense Technology chemicals includes acetone, aluminum powder, anthraquinone, cab-o-sil, charcoal, Omega Chloroncetophenone (CN), O-chlorobenzalmalononitrile (CS), hexachlorethane, iron oxide black, magnesium carbonate, magnesium oxide, malononitrile, methanol, nitrocellulose, ortho chlorobenzaldehyde, potassium chlorate, potassium nitrate and silicon, according to Anderson's files.

Anderson said that in recent years he's spoken to a couple of former Defense Technology employees who came to the emergency management office asking to see the list of chemicals they had worked with at Defense Technology.

"There's two ways to look at that," Anderson said. Either the employees weren't paying attention to work-safety lectures, he said, or the Defense Technology employees were not given adequate work-safety programs to learn about the hazards of on-site chemicals.

Chemistry

Of the 1988 chemical list described above, toxicologists looking for links between disease and chemical exposure focus on the active ingredients used in the manufacture of tear gas: Agent CN (Omega Chloroncetophenone) and Agent CS (O-chlorobenzalmalononitril), according to the Toxicology Information Center of Oregon Health Sciences University.

According to medical and toxicological literature:

-- Agent CN is the standard tear gas and mildest of riot-control agents. Commonly known as "mace" in the United States, it causes watering of the eyes, and burning irritation of the skin and upper respiratory system.

-- Agent CS is more potent than Agent CN and has been referred to as "super tear gas" in military and law enforcement journals. Agent CS produces the symptoms of Agent CN more rapidly, plus nausea and dizziness and is now the most common riot-control agent in the United States and Great Britain.

-- The chemistry of CS quickly breaks down into ortho-chlorobenzaldehyde and malonitrile, a toxic compound. Malonitrile breaks down further in the body, as cyanide. However, CS compounds mixed with an antiagglomerant or silicone water repellant (known as CS1 and CS2) can remain active in the environment for days to weeks.

Medical literature

While a great deal of medical literature is available on the short-term effects of CN and CS tear gas, very little is known about long-term effects of concentrated exposures or low but long-term exposures.

Dr. Howard Hu of the Harvard Medical School, who wrote to the medical journal Lancet in 1992, said that while toxicological testing of CS and CN was reassuring, "many concerns remain, including the potential for chronic toxicity and for exacerbation of pre-existing disease." Physicians for Human Rights, a nonprofit based in Boston, complains that little is known about the "long-term pulmonary, carcinogenic, and reproductive effects," and urge more study. In 1998, a Lancet journal carried an editorial calling for a moratorium on the use of CS tear gas.

A 1997 Lancet article, "Are CS sprays safe?" said after-effects of CS exposure included blistering, dermatitis and allergic sensitization. In a written response to questions posed by the Star-Tribune, Fred Berman, director of the Toxicology Information Center in Portland, Ore., wrote, "Based on the available literature, it is apparent that no data regarding chronic low-level exposures to these compounds exists."

Pull-Quote: 'At the last fire (Defense Technologies) met us at the gate with a list of chemicals -- but that's not the same thing as providing us with a federally required list.' Stew Anderson